

**REMARKS**

Claims 1, 4-18, 33-35 and 37-55 are pending in this application, of which claims 7-14, 33, 43-50 and 55 have been withdrawn pursuant to a Restriction Requirement and an Election of Species Requirement, but should be rejoined when base claims 1 and 37 are allowed. By this Amendment, independent claims 1 and 37 are amended to recite that the gas decomposer is separate from and not in contact with the synthesizing portion. Independent claim 34 is similarly amended. Support can be found, for example, in Figs. 4, 8 and 10. No new matter is added.

**I. The Claims Are Patentable Over The Applied References**

The Office Action:

(1) rejects claims 1, 4, 6, 15-18, 37-40, 42 and 51-54 under 35 U.S.C. §103(a) over U.S. Patent Publication No. 2001/0053344 to Harutyunyan et al. (Harutyunyan) in view of Japanese Patent Publication No. 2003-313017 to Sugimoto et al. (Sugimoto);

(2) rejects claims 1, 4-5, 37 and 40-41 under 35 U.S.C. §103(a) over U.S. Patent No. 5,702,532 to Wen et al. (Wen) in view of Sugimoto; and

(3) rejects claims 1-4, 6, 15-18, 34-35, 37-40, 42 and 51-54 under 35 U.S.C. §103(a) over U.S. Patent Publication No. 2003/0147801 to Someya et al. (Someya) in view of Sugimoto. Applicants respectfully traverse the rejections.

**A. Rejection Based On Harutyunyan**

Regarding independent claims 1 and 37, the applied references fail to disclose "the gas decomposer is separate from and does not contact the synthesizing portion".

Harutyunyan discloses an apparatus 10 for producing elongated carbonaceous articles that includes chamber 11 having heating element 12, inlet port 18, exit port 20, a magnetic field generating device 40, and a catalyst bed 26 that has substrate 30 and catalyst 34. In operation, a carbon precursor from carbon-containing precursor source 16 enters the inlet port

18 in gaseous form (Fig. 1; paragraph [0031]) to form carbonaceous articles on substrate 30. The Office Action: (1) cites to substrate 30 as allegedly corresponding to the claimed gas decomposer; and (2) cites to catalyst 34 as allegedly corresponding to the claimed synthesizing portion.

The Office Action acknowledges that Harutyunyan does not disclose (A) that the gas decomposer is a molecular sieve; and (B) that the gas decomposer is made of zeolite, but cites to Sugimoto as curing the deficiency of feature (B).

Sugimoto discloses a method of producing carbon nanotubes (Abstract). Sugimoto discloses use of zeolite as part of the catalyst (see Example 1, paragraphs [0009]-[0010]). The Office Action alleges it would have been obvious to modify Harutyunyan by Sugimoto to provide "a uniform pore size to more uniformly distribute and decompose the raw material gas".

Harutyunyan fails to disclose the feature quoted above because Harutyunyan's catalyst 34 is formed on substrate 30 (Fig. 1). Sugimoto, cited as disclosing zeolite, fails to cure the deficiencies of Harutyunyan.

For the forgoing reasons, Applicants request withdrawal of the rejection over Harutyunyan as primary reference.

**B. Rejection Based On Wen**

Regarding independent claims 1 and 37, the applied references fail to disclose "the gas decomposer is separate from and does not contact the synthesizing portion".

The Office Action: (1) cites to the part of Wen's rotatable susceptor 21 adjacent to the precracking zone 28 as allegedly corresponding to the claimed gas decomposer; and (2) cites to large area wafers 23 as allegedly corresponding to the claimed synthesizing portion. The Office Action further alleges, in the Response to Arguments section, that, under the modification of Wen by Sugimoto, Wen's rotatable susceptor 21 adjacent to the precracking

zone 28 is replaced with the zeolite of Sugimoto (Office Action, page 9, last 5 lines).

Wen fails to disclose the feature quoted above because, in Wen, the large area wafers 23 are formed on the rotatable susceptor 21 (Fig. 4). Sugimoto, cited as disclosing zeolite, fails to cure the deficiencies of Wen.

For the forgoing reasons, Applicants request withdrawal of the rejection over Wen as primary reference.

**C. Rejection Based On Someya**

Regarding independent claims 1, 34 and 37, the applied references fail to result in: "the gas decomposer is separate from and does not contact the synthesizing portion" (claims 1 and 37) and "wherein the gas decomposer is separate from and does not contact any synthesizing portion for synthesizing a carbon nanotube" (claim 34).

Someya discloses a process for producing aligned carbon nanotube films (Abstract). The Office Action states that the area of substrate 1 where no nanotubes are formed corresponds to the claimed gas decomposer. The Office Action does not cite to any element as allegedly corresponding to the claimed synthesizing portion. Applicants understand that the silica-alumina sheet (Examples) allegedly corresponds to the claimed synthesizing portion.

The Office Action acknowledges that Someya does not disclose (A) that the gas decomposer is a molecular sieve; and (B) that the gas decomposer is made of zeolite, but cites to Sugimoto as curing the deficiency of feature (B). The Office Action alleges that it would have been obvious to modify Someya in view of Sugimoto to provide "a uniform pore size to more uniformly distribute and decompose the raw material gas".

Regarding the features quoted above, the Office Action's understanding is that substrate 1 corresponds to the claimed gas decomposer and the silica-alumina sheet formed on substrate 1 corresponds to the synthesizing portion. Thus Someya fails to disclose the

claimed relationship between the gas decomposer and the synthesizing portion because the silica-alumina sheet is formed on substrate 1 (see examples). Sugimoto, cited as disclosing zeolite, fails to cure the deficiencies of Someya.

For the foregoing reasons, Applicants request withdraw of the rejection based on Someya as primary reference.

**II. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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